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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,979	12/31/1999	LAWRENCE A. BOOTH JR.	042390.P6413	8560

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EXAMINER

ELDER, JEREMY RYAN

ART UNIT	PAPER NUMBER
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2612

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DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/476,979

Applicant(s)

BOOTH, LAWRENCE A.

Examiner

Jeremy R. Elder

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE  
2 MONTH(S) FROM

THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because the specification indicates the "blue duty cycle register" as 410 and the drawing indicates it as 412. In figure 1a, photosite 114 is labeled "red" but a green line is connected, and photosite 123 is labeled "blue" but not connected to anything. Also in figure 2, the line feeding photosite 114 is shown to cross over the main red line but not the main blue line being inconsistent with that of photosite 111. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: pg 10, line 1. The sentence has a typo where the second instance of "red" should be "blue". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromatsu in view of Kwon et al.

As for claims 11 and 12, Hiromatsu discloses an image reading device with a multi-line linear image sensor.

Shown in fig. 2 and described in col 3, line 66 to col. 4 line10, Hiromatsu discloses a timing generator 13 and the image sensor line for each color (R, G and B) creating individual channels for each. The timing generator 13 sets the line scanning time (LST) by which would constitute a duty cycle. As shown in fig. 3, based on this duty cycle, the accumulation times ( $t_r$   $t_g$   $t_b$ ) are created.

However, Hiromatsu does not disclose the use of registers to control aspects of the image sensor by comparing values.

Kwon et al. disclose a testing circuit for image sensors.

In col. 3, lines 51-61, Kwon et al. disclose the use of registers to hold and compare various types of data such as operation modes, frame rate, etc.

It would have been obvious to one of ordinary skill in the art at the time of invention to use registers as taught by Kwon et al. as duty cycle registers for the first and second color channels for the benefit of controlling the pulse generation unit to generate sample signals according to the register setting.

5. As for claim 13, Hiromatsu discloses a line scan time (LST) in figure 3. According to Kwon et al., registers can be used for various purposes as stated above.

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Therefore it would have been obvious to use a register of Kwon et al. as a duty cycle register to control the generation of a set of pulses that would be the length of the determined line scan time of Hiromatsu for the benefit of further controlling the accumulation times of the primary color channels.

6. As for claim 14, Hiromatsu discloses in figure 2 a signal processor 17 that receives the output from the A/D converter 16, which receives signals that originate at the image sensor 14.
7. As for claim 15, Hiromatsu discloses in figure 2 a single output from the signal processor 17.

***Allowable Subject Matter***

8. The following is an examiner's statement of reasons for allowance for claims 1-10: the prior art does not teach or fairly suggest dividing integration times into sets of integration times.

Although the Guidash, Hirama and Hiromatsu show the integration times of the three primary colors of light, each is a collective integration time where they either start or finish at different times.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Elder whose telephone number is (703) 305-4693. The examiner can normally be reached on M-F 800-430.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600